

ATTORNEY DOCKET NO.: 21105.0005U2

ABSTRACT

The *in vivo* three component areal density composition of a patient along a transmitted x-ray beam is derived by raster-scanning a collimated x-ray beam across a bony region of the patient, with each point scanned at different energies, and using 5 matrix equations with *a priori* spectra information to solve for the relative areal density of soft tissue, fat and bone.